

a second at least two detection section, disposed downstream of the first detection section at a predetermined interval from the first detection section, in a feeding direction in a middle portion of said feeding section, for detecting the sheets ~~[[feed]]~~ fed by said feeding section;

a first calculation section configured to calculate a sheet feeding speed of the feeding section based on detection results by the first and second detection sections and the distance between the first and second detection sections, and to calculate a time required for a sheet reaching the vaned wheel from the first detection section based on the sheet feeding speed and the distance between the vaned wheel and the first detection section;

~~measurement section configured to measure a passing time of the sheets feed by said feeding section in each detection section based on a detection result of each detection section;~~

a second calculation section configured to obtain a control amount of a rotation phase of said vaned wheel necessary to put a sheet between the blades of the vaned wheel from the time calculated by the first calculation section; ~~a measurement result of the measurement section;~~ and

a control section configured to control the rotation phase of said vaned wheel in accordance with the control amount obtained by the second calculation section.

2. (Currently Amended) The apparatus according to claim 1, wherein said second calculation section acquires a tip-end passing time with respect to a plurality of sheets from the ~~measurement result of said measurement~~ first calculation section, subjects the acquired tip-end passing time of the plurality of sheets to a predetermined calculation, and obtains the control amount of the rotation phase of said vaned wheel.

3. (Currently Amended) The apparatus according to claim 1, wherein ~~[[the]]~~ an ~~control~~ amount obtained before a supply operation of the sheets by said supply section is given as an initial value of said control amount.

4. (Currently Amended) The apparatus according to claim 1, wherein said control section has a reference signal as a time reference of the control, obtains a deviation amount from said reference signal when the sheets supplied by said supply section are ~~[[feed]]~~ fed by said feeding section and reach said vaned wheel, additionally obtains the deviation amount of rotation of said vaned wheel with respect to said reference signal, controls the rotation of said vaned wheel based on a difference of these obtained deviation amounts, and establishes synchronization between a supply timing of the sheets by said supply section and the rotation phase of said vaned wheel.

5. (Currently Amended) The apparatus according to claim 1, further comprising:  
at least one other vaned wheel ~~a plurality of~~ coaxially disposed with said vaned wheels  
wheel for guiding the sheets into said one accumulation section; and said second detection  
section includes at least two sensors ~~at least two detection section~~, disposed at a  
predetermined interval in a direction crossing at right angles to the feeding direction in the  
middle portion of said feeding section, for detecting a tip end or a rear end of the sheets feed  
by said feeding section in a state in which synchronization is established between the rotation  
phase with respect to each vaned wheel and a supply timing of the sheets by said supply  
section~~[[;]]~~.

~~measurement section configured to measure an inclination of the sheets~~ ~~[[feed]]~~ fed by  
~~said feeding section with respect to the feeding direction based on the detection result of each~~  
~~detection section; and~~

~~control section configured to separately control the respective rotation phases of said two vaned wheels based on the measurement result of the measurement section.~~

6. (Currently Amended) A processing apparatus of sheets, comprising:

a supply section configured to supply the sheets;

a feeding section configured to feed the sheets supplied by the supply section;

a detection section configured to detect a type of the sheets from the sheets [[feed]] fed by the feeding section;

a sorting section configured to sort the sheets [[feed]] fed by said feeding section in accordance with a detection result of the detection section;

a plurality of vaned [[wheel]] wheels which [[has]] have a plurality of blades arranged at a predetermined interval in a rotation direction, and which rotate[[s]], thereby allows allowing the sheets sorted by said sorting section to enter between said blades, and guide[[s]] the sheets in a predetermined direction;

a plurality of [[an]] accumulation section sections for accumulate accumulating the sheets guided by the vaned [[wheel]] wheels;

a first detection section provided in the feeding section, for detecting sheets fed by the feeding section;

a second at least two detection section, disposed downstream of the first detection section at a predetermined interval from the first detection section, in a middle portion of said feeding section, for detecting the sheets [[feed]] fed by said feeding section;

a first calculation section configured to calculate a sheet feeding speed of the feeding section based on detection results by the first and second detection sections and the distance between the first and second detection sections, and to calculate each time required for a sheet reaching each of the vaned wheels from the first detection section based on the sheet feeding speed and each distance between each of the vaned wheels and the first detection section;

~~measurement section configured to measure a tip-end passing time of the sheets feed by said feeding section in each detection section based on a detection result of the detection section;~~

a second calculation section configured to obtain a control amount of a rotation phase of each of said vaned ~~[[wheel]]~~ wheels necessary to put a sheet between the blades of each of the vaned wheels from a measurement result of the measurement section each time calculated by the first calculation section; and

a control section configured to control the rotation phase of each of said vaned ~~[[wheel]]~~ wheels in accordance with ~~[[the]]~~ each control amount obtained by the second calculation section.

7. (Currently Amended) The apparatus according to claim 6, wherein said second calculation section acquires a tip-end passing time with respect to a plurality of sheets from the ~~measurement result of said measurement~~ first calculation section, subjects the acquired tip-end passing time of the plurality of sheets to a predetermined calculation, and obtains the control amount of the rotation phase of said vaned wheel.

8. (Currently Amended) The apparatus according to claim 6, wherein ~~[[the]]~~ an ~~control~~ amount obtained before a supply operation of the sheets by said supply section is given as an initial value of said control amount.

9. (Currently Amended) The apparatus according to claim 6, wherein said control section has a reference signal as a time reference of the control, obtains a deviation amount from said reference signal when the sheets supplied by said supply section are ~~[[feed]]~~ fed by said feeding section and reach said vaned wheel, additionally obtains the deviation amount of rotation of said vaned wheel with respect to said reference signal,

controls the rotation of said vaned wheel based on a difference of these obtained deviation amounts, and establishes synchronization between a supply timing of the sheets by said supply section and the rotation phase of said vaned wheel.

10. (Currently Amended) The apparatus according to claim 6, further comprising:  
at least one other vaned wheel a plurality of coaxially disposed with one of said vaned  
wheels for guiding the sheets into ~~[[said]]~~ at least one of said accumulation sections  
section[[;]], and said second detection section includes at least two sensors at least two  
~~detection-section~~, disposed at a predetermined interval in a direction crossing at right angles  
to the feeding direction in the middle portion of said feeding section, for detecting a tip end or  
a rear end of the sheets ~~[[feed]]~~ fed by said feeding section in a state in which synchronization  
is established between the rotation phase with respect to each vaned wheel and a supply  
timing of the sheets by said supply section~~[[;]]~~.

~~measurement section configured to measure an inclination of the sheets feed by said~~  
~~feeding section with respect to the feeding direction based on the detection result of each~~  
~~detection section; and~~

~~control section configured to separately control the respective rotation phases of said~~  
~~two vaned wheels based on the measurement result of the measurement section.~~

11. (New) A processing apparatus of sheets, comprising:  
a supply section configured to supply the sheets;  
a feeding section configured to feed the sheets supplied by the supply section at a  
reference feeding speed;  
a vaned wheel which has a plurality of blades, and which rotates, thereby allowing  
said sheets to enter between said blades, and guides the sheets in a predetermined direction;  
an accumulation section for accumulating the sheets guided by the vaned wheel;

a first detection section provided in the feeding section, for detecting the sheets fed by the feeding section;

a second detection section, disposed downstream of the first detection section at a predetermined interval from the first detection section, for detecting the sheets fed by said feeding section;

a first calculation section configured to calculate a sheet feeding speed of the feeding section based on detection results by the first and second detection sections and the distance between the first and second detection sections, and to calculate a first time required for a sheet reaching the vaned wheel from the first detection section based on the sheet feeding speed and the distance between the vaned wheel and the first detection section;

a second calculation section configured to calculate a second time based on the reference feeding speed and the distance between the vaned wheel and first detection section;

a third calculation section configured to obtain a control amount of a rotation phase of said vaned wheel necessary to put a sheet between the blades of the vaned wheel based on the first time calculated by the first calculation section and the second time calculated by the second calculation section; and

a control section configured to control the rotation phase of said vaned wheel in accordance with the control amount obtained by the third calculation section.

12. (New) A processing apparatus of sheets according to claim 11, further comprising:

a detection section configured to detect a type of the sheets from the sheets fed by the feeding section;

a sorting section configured to sort the sheets fed by said feeding section in accordance with a detection result of the detection section;

a plurality of vaned wheels which have a plurality of blades arranged at a predetermined interval in a rotation direction, and which rotate, thereby allowing the sheets sorted by said sorting section to enter between said blades, and guide the sheets in a predetermined direction; and

a plurality of accumulation sections for accumulating the sheets guided by the vaned wheels.